

25. Montyon prize, in connection with unhealthy occupation, 2,500 francs, to M. Denayrouse for his invention to protect workmen while in the midst of an irrespirable medium.

26. The Tremont prize, 1,000 francs, having been awarded for three years, 1873-75, to Prof. A. Cazin, an "encouragement" of 500 francs was awarded to M. Sidot for his researches on the various conditions of carbon and on the protosulphuret of carbon.

27. The Gegner prize of 4,000 francs was awarded to M. Gau-gain to assist him in pursuing his researches on electricity and magnetism.

28. The Laplace prize, consisting of a complete collection of the works of Laplace, was awarded to M. Bonnefoy, "dux" of the Ecole Polytechnique in 1875.

#### NOTES

PROF. HUXLEY, on Tuesday last, at the Zoological Society, in his paper on *Ceratodus*, in describing the brain of that fish for the first time, showed how closely it approached that of the Lepidosiren, and how that in some points it resembled the Selachian rather than the Ganoid type. He gave cogent arguments against the theory of Gegenbauer with reference to the typical conformation of the fore limb, and laid special stress on the affinities of the animal with *Chimaera*.

THE Crown Prince and Princess received the leading German scientific men on Monday at Berlin, in order to confer upon the means of securing an adequate representation of Germany in the exhibition of scientific instruments to be held in London next May. Besides Doctors Achenbach and Falck, the Ministers of Commerce and Education, there were present Herren Kirchhoff, Dubois-Reymond, Dove, and Foerster, as physicists; Herren Hoffmann and Maghellans, as chemists; and Herren Reuleaux and Siemens as representatives of mechanical science. Mr. Cundiffe Owen, the Director of the South Kensington Museum, was present at the audience. A German committee was formed to promote the objects of the meeting. This is the latest adhesion to the scheme, and we are now able to say that the arrangements are complete in the case of Germany, the United States, Belgium, Holland, and Switzerland. In all these countries, committees appointed by Government are collecting instruments either for the Research, the Historical, or the Educational department.

THE following extract from the Order Paper of the Legislative Council of New Zealand, Oct. 19 last, seems to show that a supposed prehistoric man may perhaps become the subject of a judicial inquiry. The skeleton in question was exhumed in the course of excavations made for Moa bones and associated human remains by Dr. Haast, as detailed in his paper ("Trans. N.Z. Institute," vol. vii.), and as that author holds strongly to the Palæolithic age of the deposit, while others assert its comparatively recent date, it will be interesting to observe what light the coroner's inquest will throw on the subject:—"The Hon. Mr. Mantell to move, That there be laid upon the table copies of any proceedings at any inquest held upon a body found, under suspicious circumstances, in a cave known as the 'Moa Bone Point Cave,' at Sumner, in the Province of Canterbury, on Saturday, Oct. 19, 1872, whose skeleton is reported to be in the Christchurch Museum. And, in the event of no such inquest having been held, that the Government lay upon the table a statement of the reasons why no inquest was held; or assure the Council that instructions will be forthwith issued to the proper authorities to make such inquiry as may, if possible, lead to the identification of the individual whose body was so found, and set at rest any doubts as to the manner in which he came by his death."

WE would draw the special attention of our readers to a paper in the current number of the *Journal of Mental Science*, by Dr. Herbert B. Major, entitled "Observations on the Brain of the Chacma Baboon." Having, in his Graduation Thesis before the University of Edinburgh, shown that in the smaller apes the

size of the nerve corpuscles of the cortex of the occipital lobes was less than in the human subject, the author has analysed, layer by layer, the cortical substance of the brain of the chacma and man, his observations as yet being entirely negative. The points investigated are the number and appearance of the layers; the character of the nerve-strata; also the vessels and the white medullary substance.

THE large female chimpanzee, Mafoka, at Dresden, which has recently attracted so much attention, died, we regret to say, a short time ago. Dr. Meyer promises us an account of the animal.

A PAPER by Prof. Reinhardt has recently been published at Copenhagen, on the Glyptodon remains of Brazil, together with the account of a new species, *Glyptodon (?) dubius*.

THE *éloge* of General Poncelet at the anniversary of the Paris Academy was the occasion of a pathetic scene. A tribune had been set apart for the use of Poncelet's widow, who was sitting with her lady companion. When M. Bertrand referred to the attentive care which had surrounded the last days of the departed geometer, and the real worship paid to his memory by the noble woman who had been his wife, Madame Poncelet could not restrain her weeping, and her emotion was communicated to the whole audience. The house was crowded by friends and pupils of Poncelet.

THE Meteorological Society of Paris has elected M. Janssen president for 1876. Mr. R. H. Scott, the director of the English Meteorological Service, has been nominated a member of the Council, and M. H. St. Clair-Deville one of the vice-presidents.

AT a recent meeting of the Vienna Geological Society, the Director, M. von Hauer, welcomed Dr. E. Tietze, who, after more than two years' sojourn in Persia, had safely returned to Vienna. He made extensive geological researches, especially in Mount Elburz, and eastward as far as Asterabad and Sharood. He visited, besides, the environs of Asabeidshan, Ispahan, Chamjar, and the province of Farsistan, as also the salt desert south-east of Teheran.

THE "Results for 1873 of the Meteorological and Magnetic Observations taken in Victoria, Australia," have been received. In addition to the usual averages, which appear to be carefully made, Prof. Ellery gives valuable summaries of electrical phenomena, hailstorms, frosts, snow, sleet, gales, and strong winds, together with a detailed statement of the "hot winds" which have occurred during the year in different parts of the colony, and which form so important a feature of the Australian climates. The publication is accompanied with a map, showing the positions of the meteorological stations and the telegraph and railway routes.

FROM Dr. King's recently-issued report on the cinchona plantations in British Sikkim, which we have previously noticed, we learnt for the first time that an efficient febrifuge was being made and sold at a cheap rate in India. On this subject Mr. Gammie, the resident manager of the Government plantation at Darjeeling, writing to Dr. Hooker, says: "We are now busy collecting cinchona bark, and propose to collect about ninety tons of dry bark this season, which we can easily do. We are manufacturing it on the spot into a cheap febrifuge, which is evidently quite as effectual as quinine. The medical department appears to be taking kindly to it, for within the last three months I have sent them over 600 lb. of it, and they are asking for more. We are now making from 40 lb. to 50 lb. a week, but are daily expecting orders to extend our factory, so as to make at least double that quantity. We have good hopes of being able to sell the febrifuge at one rupee an ounce and pay all expenses." Mr. Wood, the Government Quinologist, has, it appears, been appointed to officiate as Professor of Chemistry at Calcutta, and since his departure for the capital, the manufacture has fallen upon Mr. Gammie.

PROF. C. HOLLEN has sent us "Tables Météorologiques de Copenhague pour l'année 1874," prepared by him, and published under the auspices of the Royal Danish Academy of Sciences and Letters. A special feature of this publication is the long averages which appear with the monthly sheets of observations. As regards rain, the averages are for fifty-five years, and as regards temperature for ninety-two years. The temperature averages are particularly valuable, seeing that they are given for this long series of years for each day, each five-days period, and each month of the year.

THE contents of the Southport Aquarium have been studied with marked interest by a large number of persons during the Christmas holidays. Amongst recent additions is a very fine specimen of *Alligator lucius*, from New Orleans, more than 8½ feet in length, a very large number of young alligators, some only a few inches, a school of herrings of all sizes, two masses of living sponge containing large colonies of brittle star-fish, young skate hatched in the aquarium, in the octagonal table tanks, which also contain a magnificent collection of sea anemones, echini, living bivalve shells, zoophytes, annelids, and seaweeds. Amongst recent improvements noticeable in this aquarium is the placing of sheets of india-rubber between the plate-glass fronts of the wall tanks and the iron mullions, which has had the effect of entirely preventing the cracking of the glass from sudden changes of temperature. The quantity of water circulating in the tanks has been increased, fresh supplies being only received to compensate for evaporation. The company have a large number of iron tanks placed at the end of the pier to receive at once rare fish brought in by the deep-sea trawlers.

WE regret to hear of the death of Mr. James Hinton, well known as a writer in practical physiology and in philosophy.

M. GERMER BAILLIÈRE, the enterprising editor of the *Revue Scientifique* and *Revue Littéraire*, has started two new periodicals, an "Historical Review," quarterly, and a "Philosophical Review," monthly.

A TRIBUTE of respect was paid by the late French National Assembly to the learned Minister of Public Instruction, M. Wallon, who was elected a life-member of the Senate, representatives of every political party having voted for him, although he had declined to stand as a candidate.

THE Catholic University of Paris opened its course of scientific lectures on Dec. 27. The lecturer in higher mathematics is M. Serret (not the well-known member of the Institute). The lecturer in physics is M. Brault, who was the *préparateur*, or general assistant of M. Desains, the Sorbonne lecturer. No lecturer has yet been found for botany.

THE establishment of a School of Mines at Lille is in contemplation.

AN Imperial ordinance, published on Jan. 1, directs that the thanks of the Russian Government be conveyed to Prof. Nordenskjöld, for his exploration of the Polar Sea up to the Yenisei River.

THE Government has ordered that the annual cost of the Ordnance Survey of the United Kingdom shall be reduced. During the past and present week a large number of civil assistants at the head-quarters at Southampton have received their discharge.

EXPERIMENTS will be tried in France within a very few days with a new system of taking up and depositing letter-bags from a railway-train running at a great velocity. The apparatus, which was invented by a chief telegraphist, is entirely self-working, and great expectations are raised by the French Administration. A waggon of the Lyons railway has been

entirely fitted up on the new principle, and a special post for collecting and delivering has been erected in the Varenne St. Maur Section.

A SPECIAL meteorological monthly paper has been published by M. H. St. Clair-Deville, who has just organised the Algerian Meteorological Service. The first number was issued a few days ago.

Most interesting experiments are now being conducted at the Northern Railway Station, Paris, in the use of light generated by gramme magneto-electric machines. Success has been only partial, owing to the want of motive-power, but hopes are entertained of a speedy and successful result.

WE are glad to see from No. 2 of the *Iowa Weather Review*, that the scheme of meteorological observations for the State of Iowa has thus far proved a success. For the first decade of November, Dr. Hinrichs received eighty station reports from all parts of the State. A report of the results is at once prepared and forwarded to the newspapers for publication. The rest of the *Review* is taken up with minute directions as to the method of observing for the purpose of securing accuracy, uniformity, and fulness in the results of the observations embraced by the scheme.

MR. MURRAY has issued cheap editions of the narratives of Livingstone's first and second African expeditions. In the case of the former the cheap edition seems to be a reprint of that published during the author's lifetime, while the second is somewhat abridged. Both are neatly got up, contain most, if not all of the original illustrations, and will be welcomed by many who desire to possess the original narratives of the work which has made Livingstone immortal.

A REMARKABLY valuable discussion by M. Belgrand, of the inundations of the Garonne, viewed specially in connection with the heavy rains which fell over France from the 21st to the 24th of June last, has been appearing at intervals for the past fortnight in the *Bulletin International* of the Paris Observatory. It is pointed out, from the dates of their occurrence, that the inundations of the southern portion of the basin of the Garonne which slants from the Pyrénées, have nearly always occurred in spring or early summer, and at the same dates either no floods at all, or comparatively unimportant floods, were experienced in the northern portion of the basin which slopes down from the Cévennes and central plateaux of France. It is to be noted that it is just at this season that the rainfall of the southern portion of France attains its annual maximum, and the nearer to the Pyrénées the more decidedly is the May-June maximum marked, and that the melting of the snows which have accumulated on the Pyrénées during the winter months proceeds most rapidly. On the other hand, it is shown that the great inundations of the northern portion of the basin occur generally during the cold months of the year, and that at the time of their occurrence there have been no corresponding great floods at Toulouse, in the southern portion of the basin. It is during the cold season that the rainfall reaches its annual maximum on leaving the slopes of the Pyrénées and advancing northwards over the basins of the Tarn, Lot, and Dordogne. The disastrous inundation of June, 1875, was in accordance with the experience of previous floods in the south of France. As a great flood it was limited to the river courses sloping down from the Pyrénées; and the nearest approach to a great flood elsewhere was in the basin of the Argout, the most southern tributary of the Tarn, and it was the flood of this tributary which occasioned almost the whole of the flood of the Tarn. At such places as Auch, situated in a narrow valley, and where, consequently, the drainage area is small, the inundation was much less disastrous than at Toulouse and places similarly situated.

near the confluence of large affluents draining a wide extent of country. The following official statement of the numbers of the persons drowned, classed according to the departments, will indicate the line of greatest devastation :—Ariège, 73 ; Gironde, 1 ; Haute Garonne, 330 ; Lot-et-Garonne, 20 ; Tarn-et-Garonne, 116 ; total, 540. The discussion of these inundations with reference to the season of the year in which they have occurred in different portions of the Garonne basin, and in their relations to the physical configuration and annual maximum rainfall of each district, indicates a line of inquiry which, if further prosecuted, cannot but lead to most important practical results.

THE additions to the Zoological Society's Gardens during the past week include three Moose or Elks (*Alces machlis*) from N. America, two Arabian Gazelles (*Gazella arabica*) from Arabia, deposited ; a Pig-tailed Monkey (*Macacus nemestrinus*) from Java, presented by the Rev. W. Ewart ; a Green Monkey (*Cercopithecus callithrix*) from W. Africa, presented by the Rev. J. W. Ayre ; an Earle's Weka Rail (*Ocydromus earlei*) from New Zealand, presented by Capt. H. Bradwick.

### SCIENTIFIC SERIALS

*Bulletins de la Société d'Anthropologie de Paris*, fascicules 2, 3, 1875.—The former of these numbers gives the discussion which followed the reading of a paper by M. Pommelot, on the rock-excavations, basins, rocking-stones, and holes observable in many of the rocks of Puy-le-Dôme. Contrary to the view which he had advanced in regard to their connection with prehistoric or early historic races, and their formation by man for domestic or religious purposes, the society generally concurred in the opinions maintained by MM. Leguay, Hamy, and Mortillet, that such formations are for the most part the results of natural causes, and that flint implements would have been incapable of acting upon the hard granite of which they usually consist. They admitted, however, that some of the depressions and holes may in a few instances have been enlarged in process of time through human agency, after having become the scene or object of superstitious veneration.—M. Morice laid before the Society a report of the various races which now occupy Cochin China, the most numerous and characteristic of which are the Annamites and Cambodians. Next in point of numbers stand the Chams and the Mois, or mountain-men, and beside these a hybrid race, half-castes between Annamites and the Chinese settlers, and known as Minuongs, is rapidly attaining consideration as a distinct class.—M. Hamy gave a brief summary of a memoir, which he will soon publish *in extenso*, on the craniological characters of the race that now occupies the Island of Timor, and which he considers to be not far removed from the Papuan Negritos. His examination of a number of Timorian skulls has led him to accept as proved the distinctive characteristics assigned to the race by Owen, Busk, and De Quatrefages.—M. Topinard's paper on Australian hybrids gave rise to a long discussion, but can scarcely be said to have contributed directly or indirectly to the elucidation of any of the difficulties involved in the subject.—M. Piette's communication of the result of his exploration of the Gourdan and Lortel caverns is interesting from the fact that, in addition to the ordinary reindeer-lion, aurochs and other animal remains found in such caves, he discovered parts of two human jaws. One of these—the lower maxillary bone of an adult man, to which several much-worn teeth were still attached—was found at Gourdan in close proximity to bones referred by the author to *Cervus canadensis*, or a closely allied form. The other jaw, apparently that of a child of seven, who had died during dentition, was excavated from the floor of the Lortel cavern at a depth of 6 metres.—M. Condereau laid a paper before the Society, and explained the elaborate series of tables which he has constructed to illustrate his system of the classification of articulate sounds, and which he hopes to see accepted by anthropologists as the basis of some uniform phoneticophysiological alphabet, by which writers of different nationalities may be brought on a common ground for the comparison of the different articulate sounds of which the human voice is capable.—M. Broca brought under the notice of the Society a negro skull belonging to their museum, where it forms the fifteenth in the Gannal collection, in order to show how the normal parietal foramina may present such unusually large dimensions as to assume

after death the appearance of artificially produced parietal perforations. At a previous meeting of the Society, on March 18, M. Broca had exhibited a skull taken by M. de Palmas from an ancient cemetery in the Canary Islands, which presented a double parietal opening.—A very interesting and important paper was read by M. Broca on May 20, when he laid before the Society a *résumé* of the "Craniometrical Instructions" which they had commissioned him to draw up for the guidance of anthropologists. In accordance with the directions of the Commission these instructions are preceded by a description of the anatomy of the head, in which an entirely new anatomical nomenclature has been adopted, for which M. Broca craved the approval of his *confrères* on the ground of the obscure terminology hitherto in use in craniology. Among a number of novel terms we may instance such words as endocranum and exocranum ; pteron and discus for the ascending and the horizontal parts of the greater ala ; inion for the external protuberance of the occipital ; and basion, opisthion, staphanion, pterion for distinctive portions of the occipital, frontal, and temporal fossa. M. Broca announces that this new system of cranial terminology will be soon published *in extenso* in the "Memoires" of the Society.—M. Collineau, in connection with the subject of arrest of development in the osseous and other parts of the brain, as shown by M. Broca in his paper on parietal perforations, drew attention to the extraordinary spread of religious mania in France, of which he gave numerous instances amongst the higher as well as lower classes, and appealed to medical and other scientific men to devote themselves to the elucidation of this important subject.

*Der Naturforscher*, November, 1875.—This number contains an account of some interesting researches by M. Exner, on the capability of perceiving a time-difference between two impressions of sense. Suppose a stimulus to act at moment *a*, and another at moment *b*, how near may *a* and *b* come together and the impressions continue distinct? M. Exner examines the various cases of two impressions on the same, and on different elements of an organ of sense, on similar elements of a pair of organs, and on elements of different sense organs.—From experiments on decomposition of albumen in animal bodies, M. Forster concludes that the blood of one animal introduced into the vascular system of another behaves like the blood already present ; that albumen solutions brought into the blood are decomposed like albuminous substances received through the stomach and intestine ; and that, of the albumen present in the body, that which is firmly held in organs and cells is but little decomposed, while that entering the intestine or blood-vessels in solution is mostly decomposed.—The physical properties of a freezing mixture of sulphuric acid and ice are investigated in a paper by M. Pfaunder, and M. de Coppet discusses superfusion and supersaturation according to the mechanical theory of heat. Most of the remaining papers hardly call for notice here.

### SOCIETIES AND ACADEMIES

#### LONDON

*Royal Society*, Dec. 16, 1875.—Note on the Placentation of *Hyrax*, by Prof. Wm. Turner, of Edinburgh. The author describes the result of his study of a spirit specimen, his object being to verify or refute the recent statements of MM. H. Milne-Edwards and George, which, contrary to the observations of Sir E. Home, Owen, Huxley, and others, are to the effect that the placenta of *Hyrax* is non-deciduate. He shows that the placenta of *Hyrax* is deciduate, like that in the cat, which it resembles in form ; it has also a large allantoic sac.

*Geological Society*, Dec. 15, 1875.—Mr. John Evans, F.R.S., president, in the chair.—Francis James Bennett, Alfred Allinson Bourne, Charles Thomas Clough, John Law Cherry, William Herbert Dalton, Walter Saise, James Weeks Szlumper, and Lamont Henry Graeme Young, were elected Fellows ; and Prof. August Quedenfeldt, of Tübingen, a Foreign Member of the Society.—"Notes on the Physical Geology of East Anglia during the Glacial Period," by Mr. W. H. Penning. The author wished it to be understood that his remarks were intended to form a sketch, rather than a detailed account of the subject to which they relate. He intended to explain the origin of the so-called "middle glacial" gravels and sands, to account for their occurrence in certain areas and their non-occurrence in others, where they might reasonably have been expected. Also to briefly describe a certain series of gravels of doubtful age and origin in the